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ABSTRACT

Twenty first grade children were videotaped during their first six weeks of learning to read in a study of the modified synthetic phonics program and the four progressive stages of oral reading behavior (emergence, contextual, nonresponse, and postresponse). The approach used by the teacher emphasized learning new words through the concurrent teaching of phonics, sight words in isolation, and target words in sentences elicited from the students. Analysis of the 111 videotapings of the subjects showed that a progressive series of reading stages could be identified from changes in the subjects' uses of contextual and graphic information to identify words. The study revealed four major findings: (1) the emergent and contextual stages may not be inherent phases of the immature reading process--only the nonresponse and postresponse stages represented invariant periods; (2) because the modified synthetic phonics approach emphasized graphic cues in more than one way, it is more effective than either traditional phonics or sight word approaches; (3) reading readiness programs should include the teaching of word boundaries and grapheme/phoneme relationships to foster knowledge of the graphic system; and (4) motor behavior has a positive effect on the beginning reading process. (RL)

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A Description of Four Stages of Oral Reading Behavior During the First Six Weeks of Learning to Read

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A DESCRIPTION OF FOUR STAGES OF ORAL READING BEHAVIOR DURING THE FIRST SIX WEEKS OF LEARNING TO READ

by Sarah Rogers

Background of the Study

Fluent reading depends on the seemingly effortless and automatic ability to respond simultaneously to the contextual and graphic systems presented on the printed page. Although successful readers have mastered this complex task, at least three investigators (MacKinnon, 1959; Clay, 1966; Biemiller, 1970) have indicated that first-grade children progress through a series of stages in an effort to gain control over the ability to concurrently relate contextual and graphic information to recognize words in sentences.

A stage in reading is traditionally characterized by overdependence on one language system or systems - contextual (knowledge of syntactic constraints and story content) or graphic (printed features of letters) - to pronounce words during oral reading, and it is delineated by an excessive number of errors which represent such information. The assumptions are made that patterns of oral reading errors reflect an overreliance on the same mental strategies as used to decode words during accurate oral reading and that reading stages result from the young reader's need to overlearn the task of selecting, responding to, and finally integrating cues from each linguistic system. Successive stages in first-grade reading are interpreted to represent progressive phases of the immature reading process, with each stage advancing the individual toward more voluble reading.

Understanding the patterns of behavior exhibited by young children during the reading stages which occur during various instructional conditions could lead to the creation of better reading programs, and it could aid teachers in monitoring students' progress in reading.

Review of Related Research

MacKinnon (1959) in Canada, Clay (1966) in New Zealand, and Biemiller (1970) in New York all found that the children in their studies initially began at a prereading or emergent stage. Because of the minimal use of graphic information and an inability to match number of speech responses to number of printed words (one-to-one correspondence between speech and print), the investigators seriously questioned whether the subjects were actually reading. Biemiller hypothesized subjects were relying heavily on the oral/aural information presented by the classroom teacher before the oral reading to fabricate the stories they uttered.

From the emergent phase, the better readers in the three studies progressed to a stage of actual reading behavior in which the contextual constraints of the stories were used as the primary means for word identification. Increased attendance to graphic information and better attainment of the one-to-one correspondence between speech and print also occurred. Clay observed that finger pointing seemed to be a strategy used by children to learn the one-to-one correspondence between speech and print and advocated that it not be hurriedly trained out by the teacher.

Biemiller next reported a nonresponse stage; at least fifty percent of the errors occurred because students deliberately refused to attempt

unknown words. Because of this reluctance and an increase in graphically-constrained errors, the hypothesis was made that students were attending more closely to the printed features of words. Both Clay and Biemiller found that the earlier a child began to attend effectively to graphic information, the higher his reading achievement was likely to be at the end of the year.

Lastly, Biemiller reported a third or postresponse stage associated with an increase in the co-occurrence of graphically and contextually-constrained errors. This finding was interpreted as reflective of the ability to use context and graphic information simultaneously to identify words.

Purpose of the Study

The purpose of this study is to describe four progressive stages of oral reading behavior exhibited among twenty first-grade children learning to read from a modified synthetic phonics program during the first six weeks of reading instruction.

Because a modified synthetic approach based on concurrent teaching of the same words through phonics and as sight words was used for instruction, it was anticipated students would profit from different aspects of the presentations, process language cues in different ways and progress through different sequences of stages. It also seemed word accuracy, comprehension, ratio between speech and print, and type and function of motor behavior would differ among stages. Because previous investigators reported difficulty in distinguishing the emergent and contextual periods, it was decided to include a minimum word accuracy score of fifty percent to delineate potential or emergent reading behavior from active reading.

The major hypotheses of this study are (I) Reading stages can be identified from changes in the subjects' use of contextual and graphic information when a modified synthetic program is used for

instruction; (II) Because of the ecclectic approach to instruction, students will not progress through the same sequence of stages; (III) Word accuracy, comprehension, ratio between speech and print and motor behavior will differ among reading stages.

The following definitions underly this study:

1. The emergent or potential stage occurs when an individual is unable to accurately pronounce fifty percent of the words in a passage and less than ten percent of his substitutions are related to graphic clues.

2. The contextual stage occurs during active reading when fifty percent of the substitutions are related only to contextual constraints within a selection; less than half of all errors are nonresponse errors.

3. The nonresponse stage occurs during active reading when fifty percent of the total errors are nonresponses which result from a deliberate refusal to attempt an unknown word.

4. The postresponse stage appears when the percentages for mutually-exclusive contextual and graphic substitutions are more closely approximated than in other stages and less than fifty percent of the total errors are nonresponses.

Design of the Study

Twenty first-grade children from a self-contained classroom were each videotaped weekly from the first week of formal reading instruction on as they each read a preprimer story privately to the investigator.

No attempt was made by the investigator to influence the outcomes of the study, but the classroom teacher did modify the synthetic phonics program, Keys to Reading, 1972 Edition, in accordance with her personal philosophy of teaching reading.

Once formal reading was commenced, the subjects were prepared for the oral reading by the teacher, who presented each new word in three different but immediately successive ways: (1) she demonstrated and led the children in attacking the word through phonics; (2) the word was

read to and repeated by the students as an isolated sight word; (3) the word was printed in a sentence elicited from a student. The phonics and sight word presentations emphasized graphic information, while the sentences provided contextual clues and clarified word meaning. After the selection was read silently, each subject was videotaped and asked to answer five literal comprehension questions.

Workbook activities emphasizing grapheme/phoneme relationships within the words and games involving the vocabulary as sight words were completed as follow-up activities to daily reading of stories. More time was spent in overlearning the vocabulary as sight words than studying grapheme/phoneme relationships.

Markers were given to follow the line of print, but finger pointing was never discouraged nor was expression in oral reading mentioned.

The errors made by each child were recorded and classified as to the contextual and graphic appropriateness to the original text. Major changes in the reliance on these two types of linguistic information were then identified and interpreted as representing the boundaries of reading stages.

To meet the requirement of contextual appropriateness, substitutions, omissions and insertions had to be syntactically and semantically appropriate up to and including the error as in the example below:

Text: Mother, please let Ted go.
Child's Substitution Error: Mother, please me go.

Nonresponse errors in which the child refused to read a word and substitutions which shared the same first letter as the expected response were counted as graphically-constrained errors. Examples of substitutions and nonresponse errors are given below:

Text: See Pug run.
Substitution Error: See Paul run.

Text: Jan can play.
Nonresponse: Jan _____ play.

At times, contextually and graphically-constrained errors were not mutually exclusive, and they were counted as representing both language systems. Words to which the subject pointed were coded.

Because this investigation is intended to be descriptive and because of the small number of subjects, the data collected from the 111 individual videotapings were not subjected to statistical analysis. The original data was checked by a second coder who was paid.

Description of the Subjects

All subjects were between the ages of six years 2 months and seven years 1 month, and all were from lower to middle income families. Only four had not attended kindergarten.

Because research (de Hirsch, 1966) indicates initial success in reading is correlated with knowlege of the graphic system, a battery of informal tests involving knowledge of this system was administered one week prior to formal reading instruction. One girl in the top reading group was classified as a reader on the basis of a screening test devised by Durkin (1966); this child used context as the basis for word identification.

In general, the seven children in the top reading group received the highest scores on the Metropolitan Readiness Test and the eight children in the middle group obtained higher scores than the low group. The top reading group began to read from their books one week before the middle group, and the low group began receiving instruction with stories two weeks later.

Findings of the Study

The following findings are based on the hypotheses for this study:

1. *Hypothesis I. Reading stages can be identified from changes in the subjects' use of contextual and graphic information when a modified synthetic phonics program is used for instruction.*

Table I indicates four stages of oral reading behavior - an emergent, contextual, nonresponse and postresponse - could be identified from changes in the subjects' use of contextual and graphic information.

TABLE I. PERCENTAGES OF WORDS READ ACCURATELY AND MUTUALLY EXCLUSIVE CONTEXTUAL AND GRAPHIC SUBSTITUTION RESPONSES AND NONRESPONSES AMONG ALL ERRORS DURING EACH READING STAGE.

	READING STAGES			
	Prereading Behavior	Active Reading Behavior		
	Emergent	Contextual	Nonresponse	Postresponse
Words Read Accurately	26%	77%	91%	95%
Contextual Response Substitutions		61%	76%	67%
Graphic Response Substitutions	1%	18%	23%	32%
Nonresponses		15%	58%	9%

Each stage was progressive in nature with the reader engaging in more efficient reading at each successive level in terms of word accuracy. Changes in the use of contextual and graphic information tended to follow the patterns reported by Biemiller (1970).

Contextual information constituted the primary means for word identification throughout the study, but the subjects steadily improved in using

graphic cues. The percentage for the nonresponse errors indicated closer attendance to graphic clues during the nonresponse period, and subjects entering the postresponse phase did begin to make more effective concurrent use of graphic and contextual information.

A nonresponse did represent a deliberate refusal to attempt a difficult word because as a child in all reading groups entered this stage, he would first utter a substitution which was contextually acceptable for the unknown word, pause, and reject his substitution saying, "No," and then request specific aid for the difficult word. After a week or so in the nonresponse stage, no attempt was made to make a substitution, and the child simply requested aid for the unknown word. This behavior was interpreted to mean the child was well aware he could not decode the word from contextual or graphic clues.

2. *Hypothesis II. Because of the ecclectic approach to instruction, students will not progress through the same sequence of stages.*

In contrast to previous studies, all of the students did not begin at the emergent phase, nor did all of the subjects move through the same sequence of stages.

Table II summarizes the number of students by reading group classified at each stage during the 111 observations.

Four students did begin the videotapings at the emergent level, but fifteen seemingly bypassed this period, exhibiting active reading behavior which could be classified at either the contextual or nonresponse phases.

There was a progressive order to the stages, and students in the emergent phase always moved to either the contextual or nonresponse

periods. All students who went through the contextual phase advanced to the nonresponse level. The nonresponse period was always followed by the postresponse.

TABLE II. NUMBER OF STUDENTS AT EACH READING STAGE BY READING GROUP DURING EACH OBSERVATION

	Emergent Rdg. Groups*				Contextual Rdg. Groups				Nonresponse Rdg. Groups				Postresponse Rdg. Stage			
Observation	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total
1	0	1	3	4	4	5	2	11	3	1	0	4	0	0	0	0
2	0	0	2	2	3	4	1	8	3	3	1	7	1	0	0	1
3	0	0	1	1	1	4	2	7	5	3	2	10	1	0	0	1
4	0	0	0	0	1	3	2	6	3	3	3	9	2	1	0	3
5	0	0	0	0	0	1	1	2	5	5	3	13	2	1	0	3
6	0	0	0	0	0	1	1	2	3	4	4	11	3	3	0	6
Totals	0	1	6	7	9	18	9	36	22	19	13	54	9	5	0	14
																111

*Seven subjects were in the top reading group; eight in the middle, and five in the low reading group. Three students were absent for two videotapings, while three subjects missed one.

Only the nonresponse and postresponse stages seemed to be invariant because no child bypassed these levels. At least some children may quickly move through lower levels of reading or can initially begin reading at a more advanced level. Many children may not need to spend considerable time at the emergent or contextual periods.

Table III indicates students who began the first videotaping at the nonresponse stage were more knowledgeable in regard to the graphic system than subjects starting at lower levels.

TABLE III. NUMBER AND PERCENTAGES OF STUDENTS COMMENCING AT EACH READING STAGE RESPONDING TO SELECTED INFORMAL TESTS PRIOR TO FORMAL READING INSTRUCTION

	Knowledge of the Graphic System					
	Consistent Identification				Correct Responses	
Reading Level	Word Boundaries Within a Paragraph		Letter Boundaries Within Words		10 or more Grapheme/Phoneme Relationships	
	No.	%	No.	%	No.	%
1. Emergent (4 students)	0	0	1	25%	0	0
2. Contextual (11 students)	11	100%	5	45%	3	27%
3. Nonresponse (4 students)	4	100%	3	75%	3	75%

Nonresponse students knew more grapheme/phoneme relationships and were more able to identify both word and letter boundaries. These abilities may have enabled them to respond more effectively to both the phonics and sight word presentations during the preparation for oral reading and to use both types of information as needed during oral reading.

In turn, contextual students were skilled at identifying word boundaries but were less knowledgeable in regard to grapheme/phoneme relationships. The emergent students simply did not have basic understandings about the graphic system and could not respond to it.

3. Hypothesis III. Word accuracy, comprehension, ratio between speech and print and motor behavior will differ among the stages.

Data in Table IV indicates that with the exception of the classification for word-by-word reading, word accuracy, comprehension, ability to match speech to print and frequency of finger pointing did differ among the reading stages.

TABLE IV. PERCENTAGES FOR WORD ACCURACY; AVERAGE LITERAL COMPREHENSION SCORE; RATIO BETWEEN SPEECH AND PRINT; AND PERCENTAGES FOR MOTOR BEHAVIOR EXHIBITED BY STUDENTS DURING EACH STAGE

				% Motor Behavior	
Reading Stage	% Word Accuracy	Average Literal Comprehension Score	Ratio Speech to Print	Words Pointed To	Words Read Word by Word
1. Emergent	26%	1.8	.48	42%	100%
2. Contextual	77%	3.3	.91	62%	100%
3. Nonresponse	91%	3.6	.99	72%	100%
4. Postresponse	95%	4.4	.98	65%	100%

Word accuracy, literal comprehension and ability to match speech to print improved at each progressive stage with an almost perfect ratio occurring between spoken and printed words at the nonresponse and post-response stages.

Although each subject had a strip of cardboard for a marker during each videotaping, all of the subjects preferred to use finger pointing, always putting their markers aside. Finger pointing was exhibited during the emergent stage for the primary purpose of pointing to a word and requesting aid from the examiner, but it seemed to serve as a strategy to match speech responses to printed words, as Clay (1966) had proposed during all other stages.

Finger pointing was exhibited most frequently by the better readers and most intensively during the nonresponse phase when the ratio between speech to print was at its height, but subjects entering the postresponse period began to abandon their pointing with approximately the same ratio between speech and print resulting. It appeared subjects knew intuitively pointing had served its function and was no longer needed.

Intensive use of finger pointing also seemed to have a positive effect on comprehension. Less insertions and omissions occurred during phases of active reading when pointing was exhibited; this led to more accurate reading which, in turn, led to better literal comprehension scores.

Increased use of finger pointing did not result in slower reading; subjects simply speeded their pointing to keep pace with increased rate of speech. At times, some students even changed the pitch of their voices to indicate the mood of characters. Motor behavior did not seem to have a detrimental effect on subjects' reading.

Summary and Conclusions

A progressive series of reading stages - an emergent, contextual, nonresponse and postresponse - could be identified from changes in first-grade subjects' use of contextual and graphic information to identify words when a modified synthetic approach was used for instruction. The levels were those reported by Biemiller (1970). Contextual clues provided the primary basis for word identification, but increased competence in using graphic clues steadily improved.

As hypothesized, students did not progress through the same sequence of stages. Fifteen students bypassed the emergent level, and only the nonresponse and postresponse periods were invariant.

Because better reading achievement was associated with more efficient processing of graphic information throughout the study, the modified synthetic program, which emphasized graphic clues through concurrent presentation of the same words through phonics and as sight words, may have facilitated the ability to begin active reading at higher reading

stages and to advance more quickly. By the end of the first six weeks of instruction, all children were reading, and only two remained at the contextual level.

Prior knowledge of the graphic system may also have been a factor in bypassing lower reading phases. The best readers began at the nonresponse level - the period of greatest attentiveness to graphic cues - and the majority of these children were more knowledgeable in regard to grapheme/phoneme relationships and identification of word boundaries. This knowledge may have enabled the nonresponse subjects to respond more readily to phonics and sight word presentations of the modified synthetic phonics approach and to process graphic cues more effectively.

Word accuracy, comprehension, ratio between speech and print and frequency of finger pointing did differ among the stages. Motor behavior, particularly finger pointing, seemed to have a positive effect on learning to match speech to print and comprehension; therefore, children should be permitted to engage in these behaviors during first-grade.

In summary, the major findings of this study indicate (1) the emergent and contextual stages may not be inherent phases of the immature reading process; only the nonresponse and postresponse may represent invariant periods; (2) a modified synthetic phonics approach may be a more effective instructional strategy for first-grade reading than either the traditional phonics or sight word approaches because graphic cues are emphasized in more than one way; (3) the reading readiness program should include the teaching of word boundaries and some grapheme/phoneme relationships to foster knowledge of the graphic system; (4) motor behavior has a positive effect on the beginning reading process.

It will be imperative to describe the reading stages which accompany various instructional programs; descriptive studies can be a fruitful way to identify instructional strategies which encourage more efficient processing of linguistic cues.

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